UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,851	08/21/2001	Timothy J. Moulsley	GB 000140	7429

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EXAMINER
MEEK, JACOB M

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

<table>
<tr><td rowspan="2">Office Action Summary</td><td colspan="2">Application No.</td><td>Applicant(s)</td></tr>
<tr><td colspan="2">09/933,851</td><td>MOULSLEY ET AL.</td></tr>
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 August 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27 and 29-40</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 - 17, 19 - 27, 29 - 40</u> is/are rejected.

7)☒ Claim(s) <u>18</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>21 August 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>8/01, 2/02</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) and the Intellectual Property and High Technology Technical

Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting

directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior

to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1.   Claims 1, 2, 7, 8, 12, 13, 15, 17, 19 – 21, 25 - 27 are rejected under 35

U.S.C. 102(e) as being anticipated by Reza et al (US Patent 6,654,384).

With regard to Claims 1, 19, 20, and 21, Reza teaches a method of transmitting

information in units over a wireless digital communications link (claim 19) between a

transmitting (claim 20) and a receiving station (claim 21) by transmitting 1st information units

on a carrier modulated using a 1st modulation scheme (see Figure 2, 210, 211 and column 4,

lines 53 - 65), monitoring if correct reception of the units occurred (see Figure 2, 212 and

column 8, lines 37 – 41), and transmitting 2nd information units associated with 1st information

unit did not indicate correct reception occurred (see column 7, line 65 – column 8, line 3) and

retransmit using a 2nd modulation scheme (see Figure 2, 213, 214 and column 4, lines 53 –

65, column 7, lines 52 – 58) the 2nd information units allowing content of 1st information units

to be established (see column 7, line 65 – column 8, line 3 where this is interpreted as

equivalent functionality). Claims 19 – 21 recite the additional limitation of controls means,

which is taught by Reza (see column 4, lines 53 – 65).

With regard to claim 2, Reza teaches a method utilizing a 2nd modulation scheme is of a

lower order than the 1st modulation scheme (see column 6, lines 40 – 50 and column 7, lines

52 – 58 where is interpreted as equivalent).

With regard to claim 12, Reza teaches a method modulation schemes including n-QAM

and n-PSK (see column 6, line 40 – 50).

With regard to claim 13, Reza teaches various modulation schemes (see column 6, lines

40 – 50) that can be adjusted to maintain an error rate (column 7, lines 52 – 57).

With regard to claim 15, Reza teaches the adjustment of physical layer parameters (see

column 8, lines 41 – 51 which is inclusive of power level) based on link quality (see column 8,

lines 37 – 41).

With regard to Claims 7, 25, 26, and 27, Reza teaches a method of transmitting

information in units over a wireless digital communications link (claim 25) between a

transmitting (claim 26) and a receiving station (claim 27) by transmitting 1st information units

on a carrier modulated using a 1st bandwidth (see Figure 2, 210, 211 and column 6, lines 55 –

61 where symbol rate is interpreted as equivalent to bandwidth), monitoring if correct

reception of the units occurred (see Figure 2, 212, and column 8, lines 37 – 41), and

transmitting 2nd information units associated with 1st information unit did not indicate correct

reception occurred (see column 7, line 65 – column 8, line 3) and retransmit using a 2nd

bandwidth (see Figure 2, 213, 214 and column 1, lines 54 – 62, which is interpreted as

equivalent functionality) the 2nd information units allowing content of 1st information units to be

established (see column 7, line 65 – column 8, line 3 where this is interpreted as equivalent

functionality). Claims 25 – 27 recite the additional limitation of controls means, which is

taught by Reza (see column 4, lines 53 – 65).

With regard to claim 8, Reza teaches a method wherein the 2nd bandwidth is of lower

bandwidth than the 1st bandwidth (see column 6, lines 55 – 62 where this is interpreted as

equivalent).

With regard to claim 12, Reza teaches a method modulation schemes including n-QAM

and n-PSK (see column 6, line 40 – 50).

With regard to claim 13, Reza teaches various modulation schemes (see column 6, lines

40 – 50) that can be adjusted to maintain an error rate (column 7, lines 52 – 57).

With regard to claims 15 and 17, Reza teaches the adjustment of physical layer

parameters (see column 8, lines 41 – 51 which is inclusive of power level) based on link

quality (see column 8, lines 37 – 41).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Reza ('384).

With regard to claim 10, Reza teaches a method where his system is operable with

alternative channel schemes (see column 6, lines 31 – 36 which is interpreted as being

inclusive of UMTS which is also know as 3GPP). It would have been obvious to one of

ordinary skill in the art to modify Reza's invention in order to provide a system that would be operable in accordance with UMTS standards in order to provide a system to meet European system and market requirements.

With regard to claim 11, Reza teaches a method where his system is operable in accordance a communications protocol with an OSI model (see column 3, lines 36 – 62 which is interpreted as being inclusive of UMTS protocols). It would have been obvious to one of ordinary skill in the art to modify Reza's invention in order to provide a system that would be operable in accordance with UMTS standards in order to provide a system to meet European system and market requirements.

3.   Claims 3, 9, 29, 31 – 34, 38 - 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reza ('384) in view of Van Nobelen et al (An adaptive radio link protocol with enhanced data rates for GSM evolution; Personal Communications, IEEE [see also IEEE Wireless Communications] , Volume: 6 , Issue: 1 , Feb. 1999 , Pages:54 - 64.)

With regard to claim 3, Reza is silent with respect to a method where received 1st information units transmitted with 1st modulation scheme are combined with received 2nd information units transmitted with 2nd modulation scheme to allow the content of 1st information units to be established. Van Nobelen teaches the combining of received sub-blocks (see page 58, section The Receiving RLP which is interpreted as equivalent). It would have been obvious to one of ordinary skill in the art at the time of invention to combine Van Nobelen's invention with Reza's invention to produce a system with higher throughput (see Van Nobelen abstract).

With regard to claim 9, Reza is silent with respect to a method where received 1st information units transmitted with 1st bandwidth are combined with received 2nd information units transmitted with 2nd bandwidth to allow the content of 1st information units to be

established. Van Nobelen teaches the combining of received sub-blocks (see page 58,

section The Receiving RLP which is interpreted as equivalent). It would have been obvious

to one of ordinary skill in the art at the time of invention to combine Van Nobelen's invention

with Reza's invention to produce a system with higher throughput (see Van Nobelen

abstract).

With regard to claims 29, 31 – 34, and 38 – 40 Reza is silent with respect to a method

where received 1st information units are combined with 2nd information units. Van Nobelen

teaches the combining of received sub-blocks (see page 58, section The Receiving RLP

which is interpreted as equivalent). It would have been obvious to one of ordinary skill in the

art at the time of invention to combine Van Nobelen's invention with Reza's invention to

produce a system with higher throughput (see Van Nobelen abstract).

4.   Claims 4, 5, 14, 16, and 22 - 24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Reza ('384) in view of Rathonyi et al (US Patent. 6,532,211).

With regard to Claims 4, 22, 23, and 24, Reza teaches a method of transmitting

information in units over a wireless digital communications link (claim 22) between a

transmitting (claim 23) and a receiving station (claim 24) by transmitting 1st information units

(see Figure 2, 210, 211 and column 4, lines 53 - 65), monitoring if correct reception of the

units occurred (see Figure 2, 212 and column 8, lines 37 – 41), and transmitting 2nd

information units associated with 1st information unit did not indicate correct reception

occurred (see column 7, line 65 – column 8, line 3) and retransmitting (see Figure 2, 213, 214

and column 4, lines 53 – 65, column 7, lines 52 – 58) the 2nd information units allowing

content of 1st information units to be established (see column 7, line 65 – column 8, line 3

where this is interpreted as equivalent functionality). Claims 22 – 24 recite the additional

limitation of controls means, which is taught by Reza (see column 4, lines 53 – 65). Reza

teaches his system is useful for CDMA, but is silent with respect to spreading codes. Rathonyi teaches a method of adjusting spreading codes in response to channel quality (see column 2, lines 5 – 11). It would have been obvious to one of ordinary skill in the art at the time of invention to combine Rathonyi's invention with Reza's invention to produce a system with improved delay times (see Rathonyi, column 3, lines 54 - 56).

With regard to claim 5, Reza is silent with respect to 2nd spreading code factor being greater than 1st spreading factor. Rathonyi teaches a method of adjusting spreading codes in response to channel quality (see column 2, lines 5 – 11). It would have been obvious to one of ordinary skill in the art at the time of invention to combine Rathonyi's invention with Reza's invention to produce a system with improved delay times (see Rathonyi, column 3, lines 54 - 56).

With regard to claim 14, Reza teaches various modulation schemes (see column 6, lines 40 – 50) that can be adjusted to maintain an error rate (column 7, lines 52 – 57). Reza is silent with respect to use of spreading codes. Rathonyi teaches a method of adjusting spreading codes in response to channel quality (see column 2, lines 5 – 11). It would have been obvious to one of ordinary skill in the art at the time of invention to combine Rathonyi's invention with Reza's invention to produce a system with improved delay times (see Rathonyi, column 3, lines 54 - 56).

With regard to claim 16, Reza teaches the adjustment of physical layer parameters (see column 8, lines 41 – 51 which is inclusive of power level) based on link quality (see column 8, lines 37 – 41).

5.   Claims 6, 30, 35 - 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reza ('384) in view of Rathonyi et al ('211) in further view of Van Nobelen et al

(An adaptive radio link protocol with enhanced data rates for GSM evolution; Personal Communications, IEEE

[see also IEEE Wireless Communications] , Volume: 6 , Issue: 1 , Feb. 1999 , Pages:54 - 64.)

With regard to claim 6, Reza in view of Rathonyi is silent with respect to a method where

received 1st information units transmitted with 1st spreading code are combined with received

2nd information units transmitted with 2nd spreading code to allow the content of 1st information

units to be established. Van Nobelen teaches the combining of received sub-blocks (see

page 58, section The Receiving RLP which is interpreted as equivalent). It would have been

obvious to one of ordinary skill in the art at the time of invention to combine Van Nobelen's

invention with Reza's invention to produce a system with higher throughput (see Van Nobelen

abstract).

With regard to claims 30, and 35 – 37, Reza in view of Rathonyi is silent with respect to

a method where received 1st information units are combined with 2nd information units. Van

Nobelen teaches the combining of received sub-blocks (see page 58, section The Receiving

RLP which is interpreted as equivalent). It would have been obvious to one of ordinary skill in

the art at the time of invention to combine Van Nobelen's invention with Reza's invention to

produce a system with higher throughput (see Van Nobelen abstract).

Allowable Subject Matter

6.   Claim 18 is objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

Other Cited Prior Art

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. NPL references (Leung et al and Falahati et al) teach variations of Adaptive link

schemes. Ghosh et al (US Patent 6,366,601) and Cudak et al (US Patent 6,275,488) teach

methods of selecting modulation coding scheme related to spreading codes. Varma et al (US

Patents 6,643,322 and 6,650,623) teach additional aspects of link adaptation germane to

applicant's invention. Sayeed et al (US Patent 5,828,677), Gronberg (US Patent 6,728,259),

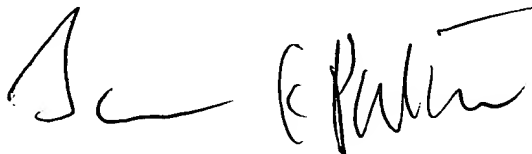and Jalali et al (US Patent 6,694,469) teach other forms of link adaptation.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jacob Meek whose telephone number is (571)272-3013.

The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

JMM

JAY K. PATEL
SUPERVISORY PATENT EXAMINER